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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,388	07/22/2003	Katharine M. Cowger	P02005US2A(P341)	6822
7590	07/19/2005		EXAMINER	
Ms. Meredith E. Palmer Bridgestone/Firestone Americas Holding, Inc. 1200 Firestone Parkway Akron, OH 44317			KNABLE, GEOFFREY L	
			ART UNIT	PAPER NUMBER
			1733	

DATE MAILED: 07/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/624,388	Applicant(s) COWGER ET AL.	
	Examiner Geoffrey L. Knable	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10-31-03</u> . | 6) <input type="checkbox"/> Other: ____ |

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1. Note: At the top of page 1 of the specification, it appears that the listed year for the filing date of the provisional application is incorrect (i.e. it appears it should be 2002).

2. Claims 2 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, line 5, no antecedent has been established for "the polymerization..."

In claim 3, it is not entirely clear whether it is the "banded tire" or the "band element" that comprises the encapsulated reactant and as such, the scope of this claim is considered to be indefinite. For purposes of this office action, it will be assumed that it is the banded element that comprises the encapsulated reactant but clarification is required.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

Art Unit: 1733

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Skipor et al. (US 2004/0007784).

Skipor et al. discloses providing a microencapsulated reactant (16), as well as a reaction facilitator (13) for the reactant, within a matrix polymer (12) where this matrix material can form a "pneumatic tire part" (e.g. paragraph [0054] and claim 39) - this is therefore considered to suggest a tire component as well as process for its formation that satisfies claims 1 and 2.

7. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Amino et al. (US 6,058,994).

Amino et al. discloses a tire tread that can include an encapsulated liquid material that can react - e.g. note the abstract. As to the requirement for a reaction facilitator, it is noted that cross-linking agents may be included in the encapsulating shell (col. 3, lines 25-25) as well as the matrix rubber (e.g. col. 6, lines 1-5), it being

stressed that claim 1 has no requirement that the reaction that is being facilitated be a reaction of the encapsulated reactant.

8. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by DE 19754341 to Menting et al.

DE '341 discloses a rubber for use in making steel cord reinforced tires where at least one additive that can be termed a reactant (e.g. sulfur) is microencapsulated - e.g. note the abstract as well as apparently equivalent English language document US 2003/0165682 to Menting et al.¹). Further, insofar as the encapsulation of only "at least one" additive is contemplated, the remaining vulcanization ingredients (e.g. accelerators, stearic acid, zinc oxide, etc.) in the rubber read on the claimed facilitator. In fact, it is noted that there is at present no requirement in the present claims that the facilitator not be also encapsulated - thus if more than one additive is encapsulated, this would also satisfy claim 1 (on being a "reactant" the other being a "facilitator").

9. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over at least one of [Vossberg et al. (US 6,405,773) or Markow (US 4,734,144)] taken in view of at least one of [White et al. (US 6,518,330) or Skipor et al. (US 2004/0007784)].

Vossberg et al. (note esp. col. 1, lines 40-57 ; col. 2, lines 37-42; col. 4, lines 47-67) and Markow (note esp. col. 2, lines 65-68 and col. 4, line 66 - col. 5, line 6) are exemplary of the known and conventional banded tires that include a composite band element and further provide evidence that cracking is a known concern in such bands.

¹ This US application publication document itself is only available as prior art as of its publication date and therefore is not available as prior art.

White et al. (note esp. cols. 1 and 3 as well as fig. 1 and the associated description) discloses a system for allowing composite materials to self-heal, this system including use of a microencapsulated polymerizable reactant as well as an activator (e.g. catalyst, initiator, etc.) for the reaction (this being consistent with the claimed "facilitator"). Skipor et al. provides similar disclosure of self-healing polymers compositions including providing a microencapsulated reactant (16), as well as a reaction facilitator (13) for the reactant, within a matrix polymer (12). Further, this reference also indicates specifically that this matrix material can form a "pneumatic tire part" (e.g. paragraph [0054] and claim 39). It is considered to have been obvious to follow the teachings of these references (i.e. to provide a composite with a microencapsulated reactant and a reaction facilitator) to modify the known crack-susceptible composite bands in banded tires so that they would have an expected ability to self-heal when cracking occurs, it being considered that the artisan would have been strongly motivated to adapt such to these known composite tire bands in light of the known concern with cracking in such composites. In such case, a tire component, process and banded tire as claimed would have been obvious.

10. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by JP 2000-211324 to Bridgestone.

JP '324 discloses a tire including a component that includes microcapsules that encapsulate a coloring agent. Further, it is considered reasonable to term the coloring agent as a "reactant" since (1) almost all materials other than purely inert materials are capable of undergoing some reaction under some conditions - the claim requires no

Art Unit: 1733

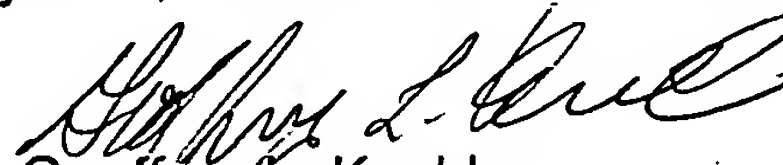
more than this; and (2) paragraph [0045] in the supplied machine translation seems to indicate that the color material can form its color only when in contact with air - it therefore seems to be reactive. As to the "reaction facilitator", it is considered that the normal rubber vulcanization agents (sulfur, accelerators, etc.) present in the rubber matrix read on this facilitator, it being stressed that the present claims do not in any way require that the reaction being facilitated is related to the encapsulated "reactant".

11. Note: In the 10-31-2003 IDS, US 4,791,966 has been crossed off on form PTO-1449 as the patent number does not match the listed patentees name. It appears that this was intended to be a reference to US 4,794,966 and therefore this patent has been considered and listed on form PTO-892.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey L. Knable whose telephone number is 571-272-1220. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on 571-272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Geoffrey L. Knable
Primary Examiner
Art Unit 1733

G. Knable
July 16, 2005